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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,249

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Yoshinobu Hotta

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03/24/2005

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EXAMINER

DASTOURI, MEHRDAD

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/020,249	Applicant(s) HOTTA ET AL.	
	Examiner Mehrdad Dastouri	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/18/2001</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 10, are objected to because of the following informalities:

In Line 2 of Claim 10, "A" should corrected to "a"..

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Lines 3 and 4 of Claim 4, "and when leading and trailing characters in the characters in the keyword," is vague and indefinite.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Lines 5 and 6 of Claim 5, "and when more than a predetermined ratio of the characters in an area enclosed by the extracted characters," is vague and indefinite.

5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Lines 3-7 of Claim 10, ", and said key character code extraction unit extracts the entered character as a key character when a code string of a

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key word as a node of character string from a character string category.", is vague and indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 5-7, 15, 17 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Murray et al., hereinafter Murray, (U.S. Patent 6,539,118).

Regarding Claim 1, Murray discloses a character string recognition apparatus, comprising:

key character code extraction unit automatically extracting a code string of key word which node of a character string from character string category be recognized and expressed as a character code (Figures 1, 3 and 4; Column 4, Lines 50-67, Column 5, Lines 1-15. Latin letter Á (Latin letter "A" with acute) is an example of key character code for Latin-1 languages.);

key word extraction extracting key word extracted by said key character code extraction unit a part the key word extracted from a character string image (Figures 2- 4; Column 5, Lines 37-67, Column 6, Lines 1-26; Column 7, Lines 11-42); and

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recognition holistically recognizing character strings in partial areas determined by the extracted key words Figures 4-7; Column 6, Lines 27-67, Column 7, Lines 1-42).

Regarding Claim 2, Murray further disclose the apparatus according to Claim 1, further comprising

a verification unit verifying a recognition result of the holistic recognition said recognition unit (Figure 6; Column 9, Lines 1-37).

Claim 3, Murray further disclose the apparatus according to Claim 1, wherein when a key word extracted from character string image, and when only a part character forming key word extracted, extraction condition as character for preceding and subsequent characters is mitigated, and a character is re-extracted (Figure 2; Column 6, Lines 27-58).

Regarding Claim 5, as best understood by the examiner, Murray discloses the apparatus according to Claim 1, wherein when a key word is extracted from a character string image, when two more separate characters are extracted in the characters forming the key word, and when more than predetermined ratio of the characters an area enclosed by the extracted by the extracted characters, said key word extraction extracts the partial character string as a partial character string of the key word (Figure 5; Column 8, Lines 1-30).

Regarding Claim 6, Murray further disclose the apparatus according to Claim 1, wherein when a key word is extracted from a character string image, said key word extraction unit performs a holistic recognizing process on an extracted key word partial

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key word, and verifies probability as a word (Figures 1 and 2; Column 5, Lines 37-67; Column 6, Lines 27-58; Figure 6; Column 9, Lines 1-37).

Regarding Claim 7, Murray further disclose the apparatus according to Claim 1, wherein when a key word is extracted from a character string image, said key word extraction unit compares an area segmented as one character in character feature and word feature, and extracts a character string forming part of key word or the key word (Figures 4-7; Column 7, Lines 11-42; Column 9, Lines 1-37).

With regards to Claims 15, 17 and 24, arguments analogous to those presented for Claim 1 are applicable to Claims 15, 17 and 24.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Gillenwater et al., hereinafter Gillenwater, (U.S. 6,557,115) .

Regarding Claim 4, Murray does not explicitly disclose further limitations recited in this claim.

Claim 4, Gillenwater, in the same field of endeavor of character string recognition, as best understood by the Examiner, discloses a system for extracting key words, wherein when a key word is extracted from a character string image, and when

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leading and trailing (blank) characters in the characters in the keyword (are stripped), and when more than a predetermined ratio of the characters forming the key word are extracted, said key word extraction unit regards a partial character string as a key word (Column 9, Lines 29-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's invention according to the teachings of Gillenwater to implement further limitations recited in Claim 4, because it will expedite key character recognition process by eliminating unnecessary characters.

10. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Jamali (U.S. Patent 6,269,188).

Regarding Claim 8, Murray does not explicitly disclose further limitations recited in this claim.

Jamali, in the same field of endeavor, discloses a system for word grouping accuracy value generation, wherein when a word is extracted using word feature of a key word from a character string image, said key word extraction unit enhances recognition precision in word recognition by referring to a dictionary which a word easily misrecognized as a key word is entered as similar word (Figures 5b and 5c; Column 9, Lines 11-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's invention according to the teachings of Jamali to

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implement further limitations recited in Claim 9, because it will enhance key word recognition and increase the accuracy of string recognition system.

Regarding Claim 10, Murray does not explicitly disclose further limitations recited in this claim.

As best understood by the Examiner, Jamali, in the same field of endeavor, discloses a system for word grouping accuracy value generation, wherein a character which is not easily misrecognized is entered in advance, and said key character code extraction unit extracts the entered character as a key character when a code string of a key word as a node of character string from a character string category (Figures 5b and 5c; Column 9, Lines 11-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's invention according to the teachings of Jamali to implement further limitations recited in Claim 10, because it will enhance key word recognition and increase the accuracy of string recognition system.

11. Claims 9, 11, 16, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Matsubayashi et al., hereinafter, Matsubayashi (U.S. 6,473,754).

Regarding Claim 9, Murray does not explicitly disclose further limitations recited in this claim.

Matsubayashi, in the same field of endeavor, discloses a system for extracting character strings, wherein when a code string of a key word which is a node of a character string is extracted from a character string category, said key character code

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extraction unit extracts a character having a large number of occurrences in entire character strings to be recognized, a character having a large number of occurrences in a character string unit, and/or a set of closely associated characters as key words (Figures 5-8; Column 9, Lines 27-67).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's invention according to the teachings of Matsubayashi to implement further limitations recited in Claim 9, because it will expedite key character recognition process by considering character strings occurring with higher probability.

Regarding Claim 11, Matsubayashi further discloses a system for extracting key words, wherein when a word area is holistically recognized, said recognition unit performs a word recognizing process, segments a character for the area, and recognizes the character so that a word recognition result can be determined when a character contained in the word recognition result contained as an higher order and has number of occurrences equal to or larger than threshold in the character recognition result (Figure 23; Column 27, Lines 60-67, Column 24, Lines 1-22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's invention according to the teachings of Matsubayashi to implement further limitations recited in Claim 9, because it will increase the accuracy of the recognition system.

With regards to Claims 16 and 20-22, arguments analogous to those presented for claims 1 and 9 are applicable to Claims 16 and 20-22.

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12. Claims 12-14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Mao et al., hereinafter Mao, (U.S. Patent 6,327,386).

Regarding Claim 12, arguments analogous to those presented for Claim 1 are applicable to claim 12 concerning holistically recognizing and verification of the word area.

Murray does not explicitly disclose further limitations recited in this claim.

Mao, in the same field of endeavor, discloses a key character extraction system, wherein:

said recognition unit holistically recognizes word area based on a word feature generated by combining character features;

said verification unit computes a division position of each character in a word matching template, compares line density of a word image obtained at each division position with line density held by each character a recognized word, and rejects a word recognition result when a sum of the line density, or difference in a collation ratio is larger than a threshold (Figures 5-9; Column 8, Lines 34-67, Column 9, Column 10, Lines 1-25).

Regarding claim 13, Mao further discloses said verification computes a division position of each character in a word image from a matching template, compares peripheral distribution of a word image obtained at each division position with peripheral distribution held by each character of a recognized word, and rejects word recognition result when sum of the peripheral distribution, or a difference in a collation ratio is larger

than a threshold (Figures 5-9; Column 8, Lines 34-67, Column 9, Column 10, Lines 1-25).

Regarding Claim 14, Mao further discloses said verification unit compares a number of characters estimated from a word image, and rejects a word recognition result when difference in the number of characters is larger than a threshold *Figure 10B; Column 12, Lines 32-67, Column 13, Lines 1-67).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's invention according to the teachings of Mao to implement further limitations recited in Claims 12-14, because it will increase the accuracy of the recognition system.

With regards to Claims 18 and 19, arguments analogous to those presented for Claims 1, 12 and 13 are applicable to Claims 18 and 19.

13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) further in view of Jamali (U.S. Patent 6,269,188) and Matsubayashi et al., hereinafter, Matsubayashi (U.S. 6,473,754).

With regards to Claim 23, arguments analogous to those presented for claims 1, 9 and 10 are applicable to Claim 23.

Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mehrdad Dastouri
Primary examiner
Art Unit 2623
March 21, 2005

MEHRDAD DASTOURI
PRIMARY EXAMINER

A handwritten signature in cursive script that reads "Mehrdad Dastouri".